

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

In the Matter of )  
 )  
LightSquared Subsidiary LLC )  
 )  
Petition for Rulemaking to Allocate the )  
1675-1680 MHz Band for Terrestrial Mobile Use )

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**FILED/ACCEPTED**

**NOV - 2 2012**

Federal Communications Commission  
Office of the Secretary

**PETITION FOR RULEMAKING**

LightSquared Subsidiary LLC (“LightSquared”), pursuant to Section 1.401 of the Commission’s rules, hereby requests that the Commission initiate a rulemaking proceeding to amend the U.S. Table of Frequency Allocations<sup>1</sup> to add a primary allocation permitting non-Federal terrestrial mobile use of the 1675-1680 MHz band as an alternative to use of the 1545-1555 MHz portion of the L Band for terrestrial mobile purposes. LightSquared proposes that this additional use of the 1675-1680 MHz band be permitted only if such use is coordinated to protect government systems that will remain in the band—including the critical weather monitoring and predicting operations of the National Oceanic and Atmospheric Administration (“NOAA”). For that reason, and the others set forth herein, this new allocation would serve the public interest, convenience, and necessity.

**I. INTRODUCTION AND BACKGROUND**

LightSquared has been authorized by the Commission to conduct ancillary terrestrial component (“ATC”) operations in the L Band.<sup>2</sup> On February 15, 2012, the International Bureau issued a Public Notice proposing to suspend this authority and take other action in response to concerns raised about the potential incompatibility of LightSquared’s operations and certain

<sup>1</sup> 47 C.F.R. § 2.106.

<sup>2</sup> See *Mobile Satellite Ventures Subsidiary LLC*, 19 FCC Rcd 22144 (2004).

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Global Positioning System (“GPS”) receivers.<sup>3</sup> The Bureau, however, did not fully address the impact of its proposed actions on the public interest and the broader implications with respect to sound spectrum management and the need to accommodate the use of mobile-satellite service (“MSS”) spectrum for terrestrial broadband services.

On September 28, 2012, LightSquared filed a series of applications seeking to modify its existing ATC authority (the “Modification Applications”) as part of a comprehensive solution that would permit LightSquared to commence operation of its new, competitive terrestrial broadband network, while also addressing issues raised by the GPS industry.<sup>4</sup> Under the proposal set forth in the Modification Applications, LightSquared would:

- Permanently relinquish its authority to conduct terrestrial operations in its upper 10 MHz downlink band at 1545-1555 MHz—the part of LightSquared’s downlink band that is closest to the GPS band—thus providing GPS receivers an additional 10 MHz guardband from terrestrial services;
- In lieu of any terrestrial use of its upper 10 MHz downlink band, initially employ alternative (non-L-Band) spectrum, comprised of a contiguous 10 MHz band at 1670-1680 MHz, which would provide the needed coverage for its terrestrial network;
- Forego terrestrial use of its lower 10 MHz downlink band at 1526-1536 MHz pending the outcome of a separate rulemaking proceeding; and
- Continue to use its two 10 MHz uplink bands at 1627.5-1637.5 MHz and 1646.7-1656.7 MHz under their existing technical parameters and match them with an alternative downlink channel at 1670-1680 MHz in an operationally-efficient and commercially-viable manner.

The 1675-1680 MHz band currently is allocated on a primary basis for both non-Federal and Federal use by Meteorological Aids and the Meteorological-Satellite Service; it is not

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<sup>3</sup> International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver, Public Notice, DA 12-214 (rel. Feb. 15, 2012).

<sup>4</sup> See IBFS File Nos. SAT-MOD-20120928-00160; SAT-MOD-20120928-00161; SES-MOD-20121001-00872 (filed Sep. 28, 2012).

allocated for terrestrial mobile service.<sup>5</sup> LightSquared's Modification Applications recognize that its proposed use of 1675-1680 MHz may require appropriate adjustments to the Commission's rules in order to facilitate the prompt processing and grant of those applications. For this reason, and in order to better enable the near-term ability of millions of Americans to benefit from competitive services offered over LightSquared's network, LightSquared requests that the Commission add a new primary allocation permitting terrestrial mobile use of the 1675-1680 MHz band as an alternative to the deployment of terrestrial downlinks in the 1545-1555 MHz portion of the L Band that is closest to the GPS band.

## **II. THE PROPOSED ALLOCATION WOULD YIELD SUBSTANTIAL PUBLIC INTEREST BENEFITS**

### **A. The Need for Additional Spectrum for Mobile Broadband Remains as Acute as Ever.**

An increasingly urgent need exists for additional spectrum to be made available to support mobile broadband services. Both the public and private sectors broadly acknowledge this fact. Each of the President's Council of Economic Advisors and the Commission has recognized that mobile data traffic is estimated to grow by a factor of 15 to 20 times over the next five years.<sup>6</sup> As a result, the President's Council has concluded that the "only feasible way to realize the full potential of wireless broadband is to make new spectrum available for wireless services."<sup>7</sup> Similarly, the Commission has recognized that this "explosive growth is creating an

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<sup>5</sup> See 47 C.F.R. § 2.106.

<sup>6</sup> See, e.g., Executive Office of the President, Council of Economic Advisers, *The Economic Benefits of New Spectrum for Wireless Broadband*, at 2 (Feb. 2012) (noting that "one industry forecaster projects that mobile data traffic will increase by a factor of 20 between 2010 and 2015.") ("CEA Report"); *Service Rules for Advanced Wireless Services in the 2000-2020 MHz & 2180-2200 MHz Bands*, Notice of Proposed Rulemaking and Notice of Inquiry, WT Dkt No. 12-70, FCC 12-32, at ¶ 10 (rel. Mar. 21, 2012) (noting Cisco Systems estimate that "North American mobile Internet traffic more than doubled in 2011 and is expected to grow over 15-fold in the next five years.") ("*AWS Service Rules NPRM*").

<sup>7</sup> CEA Report at 1.

urgent need for more network capacity and, in turn, suitable spectrum.”<sup>8</sup> As Chairman Genachowski succinctly stated, “[d]emand for spectrum is rapidly outstripping supply.”<sup>9</sup> This sentiment is shared and echoed by both the private sector and lawmakers on both sides of the aisle. As CTIA notes, the wireless industry along with a “bipartisan group of lawmakers in the House and the Senate, the President, and the Chairman of the FCC” have recognized “a need to bring additional spectrum to market to fuel what is one of the country’s key industries.”<sup>10</sup>

The economic benefits of expanded spectrum are enormous. CTIA estimates that “making additional spectrum available to the mobile broadband ecosystem will generate infrastructure investments of up to \$53 billion, provide as much as \$151 billion in GDP and create as many as 771,000 jobs by 2016.”<sup>11</sup> But this promise comes with a warning. President Obama cautions that the “new era in global technological leadership will only happen if there is adequate spectrum available to support the forthcoming myriad of wireless devices, networks and applications that can drive the new economy.”<sup>12</sup> Similarly, House Communications and Technology Subcommittee Chairman Greg Walden has noted the need to “increase efficiency, upgrade government systems, and make spectrum available to meet our country’s wireless broadband demand.”<sup>13</sup>

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<sup>8</sup> *AWS Service Rules NPRM* ¶ 10.

<sup>9</sup> Julius Genachowski, Chairman, FCC, *Remarks on Broadband: The Clock is Ticking*, at 5 (Mar. 16, 2011).

<sup>10</sup> CTIA Statement on Citigroup Spectrum Report (Sep. 26, 2011), *available at* <http://www.ctia.org/media/press/body.cfm/prid/2124>.

<sup>11</sup> Letter from Steve Largent, President and CEO, CTIA, to Chairman Julius Genachowski, Commissioner Robert M. McDowell, and Commissioner Mignon Clyburn, FCC, at 2 (Mar. 22, 2012) (“Largent Letter”).

<sup>12</sup> President Barack Obama, *Unleashing the Wireless Broadband Revolution* (Jun. 28, 2010), *available at* <http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution>.

<sup>13</sup> Opening Statement of Chairman Greg Walden, House Subcommittee on Communications and Technology, Hearing on “Creating Opportunities through Improved Government Spectrum Efficiency” (Sep. 13, 2012).

As Chairman Genachowski states more starkly:

If we don't . . . make much more spectrum available for mobile broadband, we are going to get swamped by an ocean of demand and risk our competitive advantage in the race to lead the world in mobile innovation. American consumers will face slower speeds, more dropped connections, and higher prices. And future innovators will be incentivized to launch their businesses in countries that beat us in the race for the best wireless infrastructure. The price of that will be measured in lost jobs, investment, and innovation.<sup>14</sup>

Sounding the same theme, the President and CEO of CTIA has warned that “the U.S.’s leading role in the world will be undermined unless the growing drought of additional spectrum is not quickly remedied.”<sup>15</sup>

While efforts are underway to clear additional spectrum to meet broadband demand, those efforts appear at best long-term, with little additional spectrum available in the short-term. As Commissioner McDowell observed recently, “[i]t looks like we’re at a point where we have little or no federal spectrum going to auction in the near term” so that “it’s very appropriate for us to talk about imaginative ways to squeeze more efficien[cy] out of the airwaves.”<sup>16</sup> Both the need for more spectrum and for creative means to support broadband technology are echoed in the views of National Telecommunications and Information Administration (“NTIA”)

Administrator Lawrence E. Strickling:

[G]iven the speed at which the demand for spectrum is growing, there will be a continuing national need to find spectrum for broadband services, even after we reallocate the 500 megahertz as directed by the President. . . .

[T]he old method of clearing spectrum of federal users and then making it available for the exclusive use of commercial providers is not sustainable. We have moved the easy systems. To continue

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<sup>14</sup> Julius Genachowski, Chairman, FCC, Remarks at the Consumer Electronics Show (Jan. 11, 2012).

<sup>15</sup> Largent Letter at 2.

<sup>16</sup> COMMUNICATIONS DAILY at 5 (July 20, 2012).

the old method of spectrum reallocation costs too much money and takes too long. The industry and their customers, as well as our economy, cannot afford the cost and delay.<sup>17</sup>

In short, the need for additional spectrum for mobile broadband services remains more pressing today than ever.

**B. Considerable Public Interest Benefits Would Be Realized by Deployment of LightSquared's Network.**

The new allocation proposed herein, along with grant of the Modification Applications, would allow LightSquared to deploy a mobile broadband network that would offer substantial public interest benefits. These benefits were recognized and relied upon by the Commission when it initially considered LightSquared's plan for a mobile broadband network using MSS L-Band spectrum. Then, the Commission stated that LightSquared's plan:

[P]romises the possibility of providing several public interest benefits. Its network will provide additional broadband capacity at a time when – as the National Broadband Plan noted – the nation is increasing its use of such services exponentially. It will help enhance competition among current mobile wireless providers. . . . We find that [LightSquared] plans to provide 4G mobile wireless broadband are a significant public interest benefit, both because of the competition it will bring in mobile wireless broadband services and because it will provide mobile wireless broadband service to traditionally underserved areas.<sup>18</sup>

The Commission, however, stated the obvious point that these public interest benefits are “dependent on . . . [LightSquared's] actually moving forward with its plan.”<sup>19</sup> Since that time, despite its best efforts, LightSquared has been delayed in implementing its plan because of concerns about the compatibility between LightSquared's terrestrial base stations and GPS

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<sup>17</sup> Lawrence E. Strickling, Assistant Secretary of Commerce for Communications and Information, Remarks at the Release of the Report “Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth” by the President's Council of Advisors on Science and Technology (Jul. 20, 2012).

<sup>18</sup> *SkyTerra Communications, Inc., Transferor and Harbinger Capital Partners Funds, Transferee*, 25 FCC Rcd 3059, at ¶ 62 (2010) (“*Harbinger Transfer Order*”).

<sup>19</sup> *Id* at ¶ 71.

receivers. Nevertheless, despite that costly delay, LightSquared still is in the best position among any potential new broadband network operator to bring the benefits of such a competitive network to the public.

### **III. THE 1675-1680 MHZ BAND IS AN IDEAL ALTERNATIVE TO THE DEPLOYMENT OF TERRESTRIAL DOWNLINKS IN THE 1545-1555 MHZ PORTION OF THE L BAND**

LightSquared's proposal to permanently relinquish the right to deploy terrestrial downlink operations at 1545-1555 MHz, and voluntarily forego use of the lower 10 MHz downlink band at 1526-1536 MHz pending the outcome of a separate rulemaking proceeding, means that LightSquared's network cannot be deployed now without access to alternative downlink spectrum that is compatible with LightSquared's two uplink channels in the 1627.5-1637.5 MHz and 1646.7-1656.7 MHz portions of the L Band. To fill this immediate need and enable the deployment of its terrestrial broadband network, LightSquared proposes to use the 1675-1680 MHz band.

The Commission already has allocated and licensed the 1670-1675 MHz band for terrestrial mobile use.<sup>20</sup> As such, the proposed allocation at 1675-1680 MHz would create a contiguous 10 MHz block of downlink spectrum for terrestrial wireless broadband services. This 10 MHz block could be used in conjunction with LightSquared's existing authorization in the L Band to support a viable terrestrial network.<sup>21</sup>

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<sup>20</sup> LightSquared's subsidiary, One Dot Six Corp., is authorized to operate at 1670-1675 MHz by virtue of a long-term *de facto* transfer spectrum lease agreement with the nationwide licensee, to which the Commission has consented. See ULS Lease ID L000007295.

<sup>21</sup> A request to waive or extend the substantial service requirements applicable to the 1670-1675 MHz band nationwide license is pending. See ULS File No. 0005438821 (Oct. 9, 2012). LightSquared has requested confirmation from the Commission that any build-out milestones established in the *Harbinger Transfer Order* (including, to the extent applicable, milestones covering LightSquared's leased spectrum rights in the 1670-1675 MHz band) no longer apply because of the effect of intervening Commission actions. See Letter from LightSquared to FCC (Sep. 24, 2012), attached to ULS File No. 0005424201 (filed Sep. 27, 2012).

LightSquared proposes that this additional use of the 1675-1680 MHz band to support terrestrial mobile communications be authorized only if such use is coordinated to protect government systems that will remain in the band—including the critical weather monitoring and predicting operations of NOAA. More specifically, LightSquared proposes that any operations under the proposed new, non-Federal, primary terrestrial mobile allocation at 1675-1680 MHz would proceed in cooperation with federal government uses under the existing primary allocations of this band segment for Meteorological Aids and the Meteorological-Satellite Service.

Over the years, the Commission and NTIA have cooperated in applying their respective public interest mandates to foster sound spectrum management and inject flexibility into the division of the radio spectrum between federal users and non-federal users. For example, non-federal law enforcement agencies were permitted to use a primary federal frequency for stolen vehicle recovery,<sup>22</sup> a commercial satellite operator was permitted to use federal frequencies to provide satellite service to the Navy,<sup>23</sup> an energy exploration company was permitted to timeshare NASA satellite capacity to provide commercial satellite service,<sup>24</sup> and commercial digital message providers were permitted to use federal spectrum as a substitute for originally-licensed spectrum that could not be used because of potential interference to government

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<sup>22</sup> *Amendment of Parts 2 and 90 of the Commission's Rules to Provide for Stolen Vehicle Recovery Systems*, 3 FCC Rcd 7195 (1988) (frequency initially allocated exclusively for federal use reallocated on a shared basis between federal and non-federal users for the purposes of stolen vehicle monitoring and recovery use).

<sup>23</sup> *Hughes Communications Services, Inc.*, FCC 79-809 (rel. Dec. 10, 1979) (authorizing construction of LEASAT satellite system on federal frequencies).

<sup>24</sup> *In the Matter of Application of SpaceData International LLC; For Authority to Operate on a Time Share Basis NASA's Tracking and Data Relay Satellite System*, 16 FCC Rcd 9266 (Chief IB 2001) (authorizing use of federal TDRSS spectrum for searching for oil and gas deposits on ocean floor).

stations.<sup>25</sup> In each instance, the Commission and NTIA found that such flexible and innovative spectrum management initiatives served important national goals that could be advanced only by cooperating to give private parties access to spectrum that either was used exclusively or primarily by federal agencies.

Because of its plans to use the 1670-1675 MHz band, LightSquared has developed significant experience coordinating with federal government users in the adjacent 5 MHz at 1675-1680 MHz. Accordingly, LightSquared believes that it is uniquely suited to efficiently integrate this contiguous 10 MHz band segment into a 4G LTE network in a manner that will protect the integrity of continuing, essential government operations at 1675-1680 MHz and in the neighboring spectrum above 1680 MHz. LightSquared stands ready to work closely with NTIA in establishing the operating parameters and safeguards necessary to use this frequency band in cooperation with the existing federal user of this 5 MHz segment, and to protect any federal operations that will remain in the band.

The addition of the new allocation proposed herein is well within the Commission's authority. Moreover, given concerns about GPS compatibility with terrestrial downlinks in the L Band, permitting terrestrial mobile use of the 1675-1680 MHz band as an alternative to the deployment of terrestrial downlinks in the 1545-1555 MHz portion of the L Band would solve a significant issue that to date has precluded the deployment of an L-Band terrestrial broadband network that already has been found to be in the public interest. Accordingly, making 1675-1680 MHz available for this purpose would substantially serve the national interests in achieving efficient spectrum use, dedicating critical spectrum to mobile broadband, and facilitating the

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<sup>25</sup> See *Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service From the 18 GHz Band to the 24 GHz Band and to Allocate the 24 GHz Band For Fixed Service*, 12 FCC Rcd 3471 (1997) (federal spectrum made available for digital electronic message service ("DEMS") to substitute for originally assigned spectrum that could not be used because of potential interference to government stations).

deployment of a new, competitive broadband network, with particular emphasis on rural and underserved communities.

#### **IV. CONCLUSION**

Adding a primary allocation to permit terrestrial mobile use of the 1675-1680 MHz band as an alternative to the deployment of terrestrial downlinks in the 1545-1555 MHz portion of the L Band would facilitate the implementation of the comprehensive spectrum management solution set forth in LightSquared's Modification Applications that would: (i) advance the public interest by creating a valuable guardband from terrestrial services for GPS receivers; (ii) facilitate the introduction of a new nationwide mobile broadband network; and (iii) ultimately increase the utility of the nation's scarce spectrum resources. For these reasons, LightSquared respectfully requests that the Commission promptly issue a Notice of Proposed Rulemaking consistent with this Petition.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jeffrey J. Carlisle', is written over a light gray grid background.

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November 2, 2012